REMARKS

Claims 29-48 are now in the application. Claim 29 has been amended to recite "said chemical conversion coat is formed via deposition of at least one member selected from the group consisting of hydroxide or oxide of zirconium, titanium and hafnium". Claim 29 has also been amended to recite "comprises at least iron based material" for purposes of clarification and not to limit its scope. The amendments to the claims do not introduce any new matter.

Claims 29-48 are rejected under 35 USC 103(a) as being unpatentable over JP 02-240295 in view of US Patent 6,514,357 B1 to Tada. The cited references do not render obvious the present invention.

JP 02-240295 suggests an electrodeposition coating method for coating a metal base material, in which an electrodeposition coating step is said to be conducted after a pretreatment step, without drying the metal base material. However, as appreciated by the Examiner, JP 02-240295 does not disclose any specific chemical conversion coating agents. Accordingly, JP 02-240295 fails to teach that the chemical conversion coating composition as claimed.

The invention of Tada relates to surface-treated metal materials having a superior conductivity and corrosion resistance (Please see column 1, lines 8 to 14; TECHNICAL FIELD). Therefore, in the film formed on the surface-treated metal materials of Tada, a carboxylic organic resin, an acid and polyvalent metal ions are pseudo-crosslinked and metal ions generated by the etching of the metal base material are pseudo-crosslinked to the organic resin as well (please see column 8, lines 24 to 48). Moreover, the thickness of the organic film layer is in the range of 0.1 to 2.0 μm to impart the metal material with the corrosion resistance and superior conductivity (please see column 8, line 24).

On the other hand the thickness of the coating film is orders of magnitude thinner than the film formed on the surface-treated metal material of Tada, which is in the nanometer thickness range, because the coating film of the present invention does not require superior conductivity.

Therefore, Tada is not appropriate as a cited reference to deny the non-obviousness of the present invention, because the technical field of the invention of Tada differs from that of the present invention.

Moreover, metal-surface-treating agents of Tada differ from the chemical conversion agents of the present invention in their constitutions; that is, metal ions such as Al, a water soluble ORGANIC resin, an acid, and water are the essential components in the invention of Tada (please see column 3, lines 35 to 38), in contrast to the present invention which requires the polymer of silane coupling agents (i.e., water soluble INORGANIC polymer) as an essential component. Therefore, the present invention differs from the invention of Tada in its constitutions, and is not obvious over Tada.

Tada suggests a metal-surface treating composition comprising metal ions of Al, Mg, and Mn, a water soluble organic resin, and an acid. Tada suggests the possibility of employing hydrofluoric acid as one possibility out of a number of possible acids disclosed therein. However, nothing in Tada would lead one skilled in the art to select hydrofluoric acid as the acid from among the disclosed acids as being preferred. Also, only one of the specific Examples of the invention of Tada out of 37 Examples contains hydrofluoric acid (Example 13). In fact the preferred acid of Tada would seem to be phosphoric acid since 34 of the 37 Examples therein contain phosphoric acid, which is excluded from the compositions of the present invention.

Tada further suggests that, preferably, the metal-surface-treating composition comprises a multivalent metal ion, which possibly can be Ti, and/or Zr out of a group of 14 metal ions. However, nothing in Tada would lead one skilled in the art to select Ti or Zr as being especially preferred ions. In fact, only one of the specific Examples of the invention of Tada out of 37 examples contains Ti (Example 36) and only one of the specific Examples of the invention of Tada out of 37 examples contains Zr (Example 34). These Examples do not contain hydrofluoric acid or a silane coupling agent having an amino group or even any coupling agent.

Tada also suggests the possibility of employing a silane coupling agent having an amino group, also among a myriad of other possible silane coupling agents. However, nothing in Tada would lead one skilled in the art to select a silane coupling agent having an amino group from the other possible coupling agents. Only one of the specific Examples of the invention of Tada out of 37 Examples contain a silane coupling agent having an amino group (Example 18), which does not contain Ti or Zr or hydrofluoric acid.

No embodiment or Example of the invention of Tada is disclosed, in which Zr or Ti; fluoric acid; and a silane coupling agent containing an amino group are simultaneously used. In fact, in these Examples not even a combination of any two of these components is employed. In the Examples of the invention of Tada, the two compositions that comprise Zr or Ti, also contain phosphate which is explicitly excluded from the present invention. In other words, although all the components of the present invention are individually mentioned in Tada, the combination of the claimed components is not disclosed. In order to arrive at the composition of the present invention, one would need to fortuitously select Zr or Ti out of the numerous possibilities disclosed therein, to then fortuitously select a silane coupling agent having an amino group among the possible coupling agents disclosed therein, and then to fortuitously select the hydrofluoric acid out of the possible acids disclosed therein, which suggestions would need to be made in the absence of any direction from Tada.

The metal-surface-treating composition described in Tada is an application type surface treating composition for forming a coating film that needs to be dried in order to cure (please see column 8, lines 5 to 16). Tada is not concerned with a chemical conversion coating agent. Moreover, Tada does not disclose that a chemical conversion coat is formed via deposition of at least one member selected from the group consisting of hydroxide or oxide of zirconium, titanium and hafnium as now recited in claim 29 as amended.

As mentioned above, the polyvalent metal ions in Tada are added to the metal-surface treating composition in order to pseudo-crosslink the water soluble resin to impart moisture resistance to the coating film composed of the water-soluble resin (please see column 8, lines 24 to 34). Contrary to this, the at least one member selected from the group consisting of hydroxide

or oxide of zirconium, titanium and hafnium is deposited to form the chemical conversion coating film in the present invention (please see page 5, lines 15-28). Moreover, the silane coupling agent containing amino groups is incorporated into the chemical conversion coating film when at least one member selected from the group consisting of hydroxide or oxide o£ zirconium, titanium and hafnium are deposited (i.e. co-deposition).

Moreover, Tada is not even properly combinable with JP 02-240295 since in the electrodeposition coating method described in JP 02-240295, the electrodeposition coating step for coating a metal base material is said to be conducted after pretreatment step, without drying the metal base material. However, contrary to this the compositions suggested in Tada require drying and curing after application of the composition. Therefore persons skilled in the art would not look to Tada to combine it with JP 02-240295. If anything, Tada leads away from the present invention. Furthermore combining Tada with JP 02-240295 would defeat purposes of JP 02-240295 which is impermissible.

Furthermore, it is asserted in the office action that it is obvious to wash the coating film in case that the surface treatment composition described in Tada is combined with the electrodeposition coating method described in JP 02-240295. However, the surface treatment composition of Tada, as discussed above, requires drying and curing, and it is not possible to wash the coating film without drying after surface treatment step.

Claims 29, 32-43 and 47-48 were rejected on the grounds of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-8 of US Patent 7,250,193. Claims 29, 32-43 and 47-48 are not obvious over claims 1-8 of US Patent 7,250,193 since, among other things, the present claims recite "then washing the metal base material with water without drying". On the other hand, the claims of US Patent 7,250,193 do not state this feature of "without drying". In fact, the claims of US Patent 7,250,193 recite certain water-bourne resins and/or certain water-soluble resins, and the examples therein employing these types of resins include drying after washing and prior to the cation electrodeposition. It would not be obvious to exclude drying in the claimed embodiments that employ the various water-bourne resins and/or water-soluble resins. The embodiment of US Patent 7,250,193 using the alkaline treating step did

not use drying after rinsing, but this embodiment is not explicitly stated in claims 1-8 of US Patent 7,250,193. It is further noted that "Comparative Example 1" and "Comparative Example 3" in US Patent 7,250,193 differ from an example of an inventive embodiment by excluding drying, as required by the present invention. Moreover, the claims of this application do not recite the water-bourne resins and/or water-soluble resins. Not to explicitly include or require the water-bourne resins and/or certain water-soluble resins would also not be obvious and certainly contrary to the claims of US Patent 7,250,193.

CONCLUSION

In view of the above, consideration and allowance are respectfully solicited.

In the event the Examiner believes an interview might serve in any way to advance the prosecution of this application, the undersigned is available at the telephone number noted below.

The Office is authorized to charge any necessary fees to Deposit Account No. 22-0185, under Order No. 27617-00003-US from which the undersigned is authorized to draw.

Dated: June 16, 2009

Respectfully submitted,

Electronic signature: /Burton A. Amernick/
Burton A. Amernick
Registration No.: 24,852
CONNOLLY BOVE LODGE & HUTZ LLP
Customer Number 30678
(202) 331-7111
(202) 293-6229 (Fax)
Attorney for Assignee